Original Article

ADOLESCENCE: THE DILEMMA OF TRANSITION

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ABSTRACT

Introduction: Generally Adolescence group is considered healthy and has not been given adequate attention in health programs. Not only are needs of the adolescents related to their physical, but also to their emotional and psycho-social development. This study was conducted to study the epidemiological correlates of physical, psycho-social & spiritual attributes & their risk behaviors among adolescents in urban Meerut city of Uttar Pradesh, India.

Methodology: A cross-sectional study was conducted among 200 adolescents from two colleges of Meerut.

Results: The study on physical dimension depicted that very few (26.6%) adolescents exercised daily, approximately two-thirds consumed fruits and vegetables routinely, and 95% missed meals whereas 98% showed dependency on fast foods. The personal dimension highlighted that a greater proportion (88.5%) were aware about dangers of unsafe sex but only 26.8% believed it to be a route for HIV/AIDS transmission. The spiritual dimension showed that 77% adolescents prayed regularly. The social dimension depicted that 58% adolescents were given importance in family decisions. It also showed that one-third resorted to drinking under stress.

Conclusions: Current research indicates a need for early intervention, rather than dismiss these as a transitory experience. School & college authorities should take monthly sessions on the issues related to adolescence with the parents. The dismal picture of HIV awareness should be addressed through intensive HIV/AIDS awareness campaigns &IEC activities.

Key words: College Adolescents, Physical, Psycho-social, Spiritual, Meerut, India.

INTRODUCTION

Each culture recognizes a time of passage from childhood to adulthood- the *Adolescence*, where experimentation is dominant and the need to challenge authority evident. It is defined by WHO[1] as the age group of 10-19 years. In India, adolescents constitute 21.8 percent of the population[2] and are a significant human resource that needs to be given ample opportunity for holistic development towards achieving their full potential. Adolescence is generally divided into three stages of development: early (10-13 years), middle (14-15 years), and late adolescence (16-19 years).[3,4] Not only are needs of the adolescents related to their physical, but also to their emotional and psycho-social development. With an estimated 1.2 billion adolescents alive today, the world has the largest adolescent population in history.[5]

Many adolescents die prematurely every year, an estimated 1.7 million lose their lives to accidents, violence, pregnancy related complications and other illnesses that are either preventable or treatable.[5]

Generally this group is considered healthy and has not been given adequate attention in health programs. The reason is age specific mortality is comparatively low in this age group as compared to others.

Community surveys have the advantage of being more representative; they include adolescents who do not attend counseling centers and to the best of my knowledge there are no large scale community-based studies to assess awareness about the various factors. Hence, the present study was undertaken to evaluate the effect of various physical, psycho-social & spiritual attributes, their awareness and source of their information.

MATERIAL AND METHODS

A cross sectional study was conducted among 200 adolescents attending the educational institutes of Meerut city in the state of Uttar Pradesh, India. The study was conducted under the auspices of the department of Community Medicine with ethical approval from our institution.

Consecutive sampling technique was used & all the first year students from the medical (150 students) & dental fraternity (100 students)of two educational institutes were included in the study from October 2010 to Dec 2010. Age was recorded in completed years based on college records.

Data was collected by interviewing the adolescent boys and girls. A previously pre-tested, pre-designed, validated, self-administered & close ended questionnaire was used to collect the information.

Prior informed verbal consent was taken from the respondents for the study. Questionnaire consisted of questions targeted at information regarding various attributes related to physical, psycho-social & spiritual dimensions of adolescents.

The questionnaire was first explained to the adolescents and then they were asked to fill it carefully. The students were also told that it was not mandatory to fill/return the questionnaire. The subjects who were not willing to participate were told that they may not return the questionnaire. Anonymity was maintained by not including the names of the respondents.

The reasons for noncompliance by 14 adolescents were involvement in other events of the college & lack of interest in the questionnaire, and being too shy to respond.

The information collected was converted into a computer-based spreadsheet. Data was entered and replies to different questions were analyzed statistically by applying ***z-test***.

RESULTS

The present cross-sectional study focused on physical (life-style), emotional, social & spiritual attributes of the adolescents. Among the above mentioned 250 students, 214 were in the age group of 17-19 years, & thus only these were included in the study.

Physical/Life-style Dimensions (Table 1):

The life-style attributes studied were- exercise, intake of fruits & vegetables, intake of milk & milk products, fast-food & habit of missing meals & statistically significant results ($p\text{-value} < 0.05$) were obtained for all the above mentioned attributes.

The current study revealed that 15.5% of the adolescents do not have the routine of doing exercise whereas the majority (84.5%) preferred to do exercise. Among these, only one-fourth (26.6%) had a habit of doing it daily & majority (65.7%) of them did it occasionally.

On studying the inclination towards the intake of fruits & vegetables, it was found that 98.5% were practicing it. The daily intake was seen in 68%, & 16.8% were consuming them occasionally. The remaining 15.2% have it when forced by their parents. After studying the life-style for the intake of milk & milk products, most of them (96.5%) followed the routine whereas the remaining were ignorant for the same. The pattern of intake was 70.5% once a day willingly & 5.7% when forced by the parents.

The highly prevalent fondness of fast-foods for fast life, which is one of the important pre-disposing factors for NCD's was studied & it was seen that 98% have a dependency on fast-food, & among these 15.8% were consuming it regularly.

Missing meals has become a common part of today's life-style due to number of reasons. A surprisingly high figure of 95.5% stated that they miss meals, & among these 24.6% were doing it because of their inclination towards junk food, whereas 6.8% do it willingly for good body physique.

Table 1: Distribution of Adolescents According to the Physical Dimensions (n=200)

Variable	Adolescents	z-score	p-value
Exercise			
No	31 (15.5)	13.27	<0.05
Yes	169 (84.5)		
Daily	45 (26.6)		
Thrice a Week	13 (7.69)		
Occasionally	111 (65.7)		
Intake of Fruits & Vegetables			
No	3 (1.5)	60.6	<0.05
Yes	197 (98.5)		
Daily	134 (68)		
When Parents forces me	30 (15.2)		
Occasionally	33 (16.8)		
Intake of Milk & Milk products			
No	7 (3.5)	35.77	<0.05
Yes	193 (96.5)		
Twice a day willingly	46 (23.8)		
Once a day willingly	136 (70.5)		
When Parents forces me	11 (5.7)		
Fast-food (for *Fast Life)*			
No	4 (2)	53.33	<0.05
Yes	196 (98)		
Daily	31 (15.8)		
Twice a Week	71 (36.22)		
Once a Week	94 (47.9)		
Missing Meals			
No	9 (4.5)	30.33	<0.05
Yes	191 (95.5)		
When I am not hungry (*in hurry*)	131 (68.6)		
Because of Junk Foods	47 (24.6)		
Willingly (*for good body shape*)	13(6.8)		

Multiple responses; Figure in bracket indicates percentage.

Personal Dimensions (Table 2A, 2B, 2C):

Sex during adolescence saddles one with health risks because the nervous system is still under formation. Such type of attitude predisposes them to RTI's/STI's. Talking about the intimate physical relationship, 54% were decisive on the thought of being physical only after marriage, whereas the remaining was expedient being physically related before marriage, but these results were not statistically significant.

The viewpoints collected for the avoidance of unwanted pregnancy showed us the domino-effects as 89% were aware about it & the results were statistically significant.

Table 2A: Knowledge & Views Regarding Sexuality among Adolescents (n=200)

Variable	Adolescents	z-score	p-value
Intimate Physical Relationship			
Before Marriage	92(46)	1.14	>0.05
After Marriage	108 (54)		
Avoidance of Unwanted Pregnancy			
Aware	178 (89)	17.73	<0.05
Unaware	22 (11)		
Knowledge about Safe Sex			
Aware	131 (65.5)	4.56	<0.05
Unaware	69 (34.5)		
Dangers of Unsafe Sex			
Aware	177 (88.5)	16.74	<0.05
Unaware	23 (11.5)		
Given Education on Sexuality			
No	40 (20)	10.71	<0.05
Yes	160 (80)		
Parents	14 (8.75)		
Teaches	36 (35)		
Friends	56 (35)		
Television & Books	49 (30.6)		
Others	5 (3.1)		
Best & Reliable Source			
Parents	73 (36.5)	3.97	<0.05
Teachers	44 (22)	9.65	
Friends	64 (32)	5.45	
Documentary Movies in Schools	60 (30)	6.25	

Multiple responses; Figure in brackets indicates percentage

A relaxing figure of 65.5% of the adolescents was aware about the knowledge of safe sex, but the remaining crestfallen figure of 34.5% was still found unaware. More than three-fourths i.e. 88.5% were aware about the dangers of unsafe sex. A great proportion (80%) of the adolescents agreed that they have been educated about sexuality, & the majority gained the knowledge through friends, television & books (35% & 30.6% respectively). The other sources were parents & teachers, but the best & reliable source was parents (36.5%) as others could distort the information, though because of cultural barriers this is often not possible in Indian scenario.

Table 2B: Knowledge of HIV/AIDS among Adolescents (n=200)

Variable	Adolescents	z-score	p-value
Transmission of HIV/AIDS			
Sexual Contact/Unsafe Sex	195 (26.8)	7.48	<0.05
Contaminated Needles	183 (25.1)	8.3	
Blood Donation	181 (24.9)	8.37	
From Mother to Child	168 (23.1)	9.28	
AIDS Cannot Spread By			
Touching/Kissing/Hugging	188 (27.3)	7.09	<0.05
Using Same Razor	54 (7.8)	22.2	
Sharing Same Toilets	157 (22.8)	9.38	
Sharing Towels/ Clothes/Utensils	164 (23.8)	8.73	
Bitten By Same Mosquito	126 (18.2)	11.77	

Multiple responses; Figure in brackets indicates percentage.

Knowledge about transmission of HIV/AIDS is really important now-a-days & its prevalence is increasing in this group. 26.8% believed the underlying cause to be unsafe sex, 25.1% thought the cause being contaminated needles & the remaining one-quarter each thought it to be due to blood donation & peri-natal transmission respectively.

Even in today's era, three-fourth of the adolescents feel that HIV/AIDS can spread by touching/kissing/hugging, sharing same toilet/towels/clothes/utensils or bitten by same mosquito and shockingly these results were statistically significant.

Table 2C: Distribution of Adolescents According to the Substance Abuse (n=200)

Variable	Adolescents	z-score	p-value
Cigarette/Tobacco/Alcohol Ever Experienced			
Yes	50 (25)	8.33	<0.05
No	150 (75)		
Role of Peer Pressure in Smoking/Alcoholism			
Yes	88 (44)	1.71	>0.05
No	112 (56)		
Reason for Indulging in Smoking/Alcoholism			
Peer Pressure	129 (40.8)	2.6	<0.05
Status Symbol	83 (26.2)	7.93	
Imitating Parents & Elders	22 (6.9)	23.94	
Sign That You Are Grown-up	69 (21.8)	9.72	
Others	13 (4.1)	32.78	

Multiple responses; Figure in brackets indicates percentage

It is seen that smoking and drinking become symbols of maturity and independence, among the young people.

When questioned about their drug-abuse behavior, 25% agreed they have ever experienced cigarette, tobacco or alcohol. When asked about the reason for indulging, 40.8% said it to be due to peer pressure. About a quarter feel it to be a status symbol & another quarter consider it to be a sign of grown-up. A small percentage of 6.9 indulge imitating their parents & elders.

Spiritual Dimensions (Table 3)

Though an important dimension, WHO has not included it in the definition of health because it is difficult to quantify & there are no scales available to measure it, still we made an attempt to whatever little we can extract on spirituality in the present study.

When asked about the frequency of praying, a statistically significant figure of 77% conceded that they do it regularly. Less than a quarter (17.5%) confessed that they pray only during exams or other stressful situations. 2.5% prayed when asked by somebody else while 3% did not pray at all.

Table 3: Distribution of Adolescents According to the Spiritual Quotient (n=200)

Variable	Adolescents	z-score	p-value
When Do You Pray			
Everyday	154 (77)	9	<0.05
Exams & Other Stressful Conditions	35 (17.5)	12.03	
When Told By Someone Else	5 (2.5)	43.18	
Does Not Pray At All	6 (3)	39.17	
When Do You Feel Near To God			
While Praying	66 (33)	5.15	<0.05
By Obeying Parents	59 (29.5)	6.4	
By Helping Poor/Needy	65 (32.5)	5.3	
By Fasting	5 (2.5)	43.18	
I Don't Feel Near To God	5 (2.5)	43.18	
Views Regarding Wrong Deeds Affecting Your Destiny			
God Punishes On The Same Day	32 (16)	13.08	<0.05
God Punishes In The Same Life	148 (74)	7.74	
God Punishes In Another Birth	2 (1)	70.00	
Doesn't Affect Destiny (*as destiny once written can't be changed*)	11 (5.5)	27.81	
I Don't Believe In ***Karmic Law***	7 (3.5)	35.77	

Multiple responses; Figure in brackets indicates percentage

The further study on spiritual quotient went forward asking as to when you feel near to God-33% said while praying, 32.5% felt while helping poor/needy & another 29.5% believed by obeying parents. 2.5% by fasting & rest 2.5% never felt close to God. Also, the above results were statistically significant.

Even in today's materialistic world, people still rely on destiny i.e. *Karmic Law,* & this has been revealed through our present study that only a small proportion of 3.5% doesn't believe in karmic law, & again only 5.5% reckon that destiny once written can't be altered. Three-fourths (74%) opine that God punishes in the same life for the wrong deeds.

Social Dimensions (Table 4):

We questioned as to how much their words mattered in the family, & more than half (58%) said that they were taken seriously while 10% never gave suggestions.

When asked that whom they would resort to when under stress, 34.8% preferred talking to friends & another 24.2% always conversed with the parents. The study also brought forward the dependency on drug abuse like smoking &

alcoholism under stress, but only a small percentage of 2.6 resorted to the same.

There is a rising scale of working women which brings forward a major question as to which nurturing is better: 77.5% of the adolescents were of the opinion that the upbringing by a home-maker is better than a working mother, & these results were statistically significant.

It is important to have *an idol for an ideal life*, & when questioned about the same, more than three-fourths (83.5%) believed that there should be an idol, & among these more than half (59.5%) considered their parents as their idol.

Table 4: Distribution of Adolescents According to the Social Quotient (n=200)

Variable	Adolescents	z-score	p-value
Your *Say* in the Family			
It's Taken Seriously	116 (58)	2.29	<0.05
Only Heard But Not Implemented	48 (24)	8.67	
I Am Not Just Involved	16 (8)	22.11	
I Don't Give Suggestions	21 (10)	19.05	
Under Stress You Would			
Talk To Friends	108 (34.8)	4.47	
Talk To Parents	75 (24.2)	8.6	<0.05
Talk To Relatives	36 (11.6)	16.7	
Watch Television/Play Games	20 (6.6)	24.11	
Go To Sleep	31 (10)	19.05	
Avoid Talking	27 (8.7)	20.65	
Smoking/Drinking	8 (2.6)	43.09	
Others	5 (1.6)	48.4	
Upbringing By Which Mother Is Better			
Working	45 (22.5)	9.16	<0.05
Housewife	155 (77.5)		
Footprints You Would Follow			
No Idol Followed	33 (16.5)	12.88	<0.05
Idol Present	167 (83.5)		
-Parents	119 (59.5)		
-Others	48 (24)		
Views Regarding Treatment To Be Given To Elderly In The Family			
Must Be Taken Care-Off In The Home Itself	148 (74)	8	<0.05
Old-Age Homes & Day-Care Centers	8 (4)	32.86	
Joint Family System To Be Revived	41 (20.5)	10.17	
Are Capable To Care About Themselves	1 (0.5)	70	
Others	2 (1)	53.33	

Multiple responses also considered; Figure in parenthesis indicates percentage.

Now with the advancements in the medical technology & increasing life expectancy, India too has an increasing graph of the geriatric population, & when the adolescents viewpoint were taken about the treatment they would give to the elderly in the family, about three-fourths (74%) feel that they must be taken care-off in the home itself, & strikingly a quarter (20.5%) of them felt that the joint family system should be revived for their better care. Only 4% were comfortable with the idea of old age homes & day-care centers.

DISCUSSION

As India is in the transitional phase & the recent data states that 53% of the overall mortality is due to non-communicable diseases (NCD's), increasing emphasis is being laid on the life-style factors, as this is the time when the seeds of harmful practices are sowed. Hence, there is a definite need to monitor the prevalence of these risk factors in this age group and plan interventional measures for the same.

Physical/Life-style Dimensions:

On studying the inclination towards the intake of fruits & vegetables, it was found that 98.5% were practicing it. However, Singh A K et al[6] (2006) in Delhi reported contrasting result and found an extremely low consumption of fruits and vegetables, only 39.4% adolescents had fruits daily.

In the current study, 98% of the adolescents have a dependency on fast-food, & among these 15.8% were consuming it regularly. A study done by Singh A K et al[6] (2006) in Delhi found that about one-third of the adolescents ate fast food more than three times a week.

Personal Dimensions:

Sex during adolescence saddles one with health risks because the nervous system is still under formation. Such type of attitude predisposes them to RTI's/STI's.

In the present study, a great proportion (80%) of the adolescents agreed that they have been educated about sexuality, & the majority gained the knowledge through friends, television & books (35% & 30.6% respectively). The other sources were parents & teachers, but the best & reliable source was parents (36.5%) as others could distort the information, though because of cultural barriers this is often not possible in Indian scenario. A study by Sadhna Gupta et al[7] (2006) revealed that regarding reproductive facts, now a day's television is the most important source of information on sexuality, pregnancy, contraception, AIDS and STD, followed by

books, friends and elders in descending order. Watsa[8] in his study showed that they received sex information usually from mass media and friends but it was not reliable. Teachers were ill equipped to clear their doubts on sex. Francis et al in a Delhi-based study observed that most frequent source of information on reproductive facts was books (53.8%) followed by friends (47.3%). Gaash Basir et al[9] (2003) in a study in Srinagar observed that the chief source of information about HIV/ AIDS in case of 73.34 per cent adolescents was media, both electronic (47.8%) and print (25.56%) followed by friends, teachers, parents and siblings.

Knowledge about transmission of HIV/AIDS is really important now-a-days & its prevalence is increasing in this group. 26.8% believed the underlying cause to be unsafe sex, 25.1% thought the cause being contaminated needles & the remaining one-quarter each thought it to be due to blood donation & peri-natal transmission respectively. Gaash Basir et al[9] (2003) in a study in Srinagar observed that majority (23%) of respondents mentioned contaminated needles and syringes as the major risk factor in transmission, followed by sexual contact (20.5%),infected blood (7%) & perinatal transmission (3.5%). On the contrary, AIDS and STDs were well known to 70% respondents in Watsa's study conducted in 1994,[8] whereas only 14% adolescent girls were aware in a study done by Sadhna Gupta et al in 2006.[7]

Even in today's era, three-fourth of the adolescents feel that HIV/AIDS can spread by touching/kissing/hugging, sharing same toilet/ towels/clothes/ utensils or bitten by same mosquito and shockingly these results were statistically significant. Gaash Basir et al (2003)[9] in Srinagar observed that most of the adolescents believed that HIV/AIDS could spread through handshake (82%), eating with the victim or sharing utensils (64%) or use of fumets (52%).

It is seen that smoking and drinking become symbols of maturity and independence, among the young people. Cigarette smoking, the leading cause of premature mortality, has not declined since 1984; 29% of all high school seniors smoke regularly (Johnston et al, 1988; Johnston, 1989). For them, the use of tobacco provides an opportunity for taking part in a behavior that defies established social norms.[10] Boys are more likely than girls to smoke, drink, and use drugs. This holds true in developing countries too, although rates for girls are increasing faster.[3]

When questioned about their drug-abuse behavior, 25% agreed they have ever experienced cigarette, tobacco or alcohol. A study by Rahul Sharma et al[11] (2010) in Delhi in the age-group of 14-19 years revealed ever tried cigarette or bidi smoking was acknowledged by 16.0%, the prevalence of tobacco use overall, including smoking and smokeless form consumption, was found to be 20.9% in his study. The World Health Organization estimates that 70% of premature deaths among adults are due to behavioral patterns that emerge in adolescence, including smoking, violence, and sexual behavior.[12]

When asked about the reason for indulging, 40.8% said it to be due to peer pressure. About a quarter feel it to be a status symbol & another quarter consider it to be a sign of grown-up. A small percentage of 6.9 indulge imitating their parents & elders. A study by Rahul Sharma et al (2010)[11] in Delhi in the age-group of 14-19 years revealed 31.6% of the students had seen their father smoke, boys being more than girls in number. A very small number had seen their mother ever smoking. A sibling had been seen smoking by 5.1% and a best friend by 16.4%. Large numbers of the respondents (43.5%) reported having seen their favorite celebrity smoking cigarettes.

Social Dimensions:

We questioned as to how much their words mattered in the family, & more than half (58%) said that they were taken seriously while 10% never gave suggestions. Mizanur M et al (2007)[13] in a study in Bangladesh observed that although about one-third of the adolescents participated in household matters, the acceptance of their opinions was minimal; only in 7.0% of the study subjects, their opinions were accepted, in less than two-thirds (62.3%), their decisions were occasionally accepted, and in 30.7% cases the decisions were very rarely accepted.

CONCLUSION

Current research in the area of adolescent physical, psycho-social & spiritual behavior indicates a need of early intervention, rather than dismiss these as a transitory experience. In the absence of intervention, adolescents with abnormal psycho-social behavior may develop any of several disorders including affective, anxiety or impulse control disorder. Based upon our study findings we recommend that school &

college authorities should take up at least a weekly session on the issues related to adolescence with the parents. They can invite various experts at times to address important issues. Teachers should also address some issues in the class and also inform the students about good and reputable sources which they should access for correct information.

Our observations are important indicators of changing pattern and mood of the society where electronic media plays a significant role. These areas need further research and analysis by varying specialists, like sociologists and psychologists.

Results from this study highlight the importance of enhancing school, college and community-based actions to promote healthy eating and physical activity addressed to children and young people.

The study showed a dismal picture of HIV awareness among urban, educated adolescents, indirectly pointing to the likelihood of a much worse level of awareness among the rural, illiterate counterparts. The matter is serious and needs to be addressed appropriately through intensive HIV/AIDS awareness campaigns. There was hardly any scientific knowledge in circulation among the adolescents studied. The situation is alarming, as there exists widespread ignorance among adolescents about the 'risk groups'.

IEC activities are needed to promote healthy behavior in the community because the behavior of various role models in their environment was seen to influence the adolescents' own risk status significantly.

Qualitative research methods can be utilized in further studies to have in-depth analysis of the issues concerned with adolescence.

Further studies are needed with large sample to generalize the observations of the present study.

LIMITATION

A major limitation of this study is that the above observations may be true only for the study population because of convenient sample and cannot be generalized to other adolescents belonging to different socio-economic or cultural backgrounds. Further studies are needed that cover the groups of adolescents who are out of school or college, as the prevalence of health& related risk behaviors is likely to be higher among such adolescents.

Due to the use of closed ended questionnaire, the exploration of responses was limited with respect to some of the issues.

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